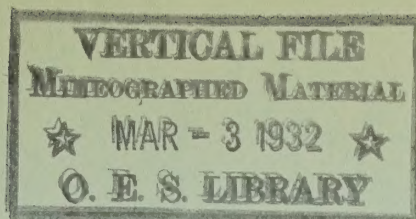


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September, 1931
Vol. I.--No. 2.

the extension poultry husbandman

UNITED STATES DEPARTMENT OF AGRICULTURE

Snow - falling, falling in the night
'Til trees are filled with pillow blobs
And artists' souls are all delight
But drift-stuck agent's soul just sobs.

Death - striking down a man or wife
Does rob the neighborhood of thought.
It alters every plan of life--
The poultry meeting's quite forgot.

Drouth - burning crop and starving man,
'Til all are wont to curse the sun
And folks forget the good we plan.
It's queer we get a "darn thing done."

H. E. Cushman.

UNITED STATES DEPARTMENT OF AGRICULTURE

Washington, D. C.

THE EXTENSION POULTRY HUSBANDMAN

Issued by the Bureau of Animal Industry and the
Office of Cooperative Extension Work, Cooperating.
H. L. Shrader, Senior Extension Poultry Husbandman.

Serial Number 2

September, 1931

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EXTENSION SPECIALISTS ATTEND POULTRY SCIENCE MEETING

Thirty-six specialists from 18 States were present at the Poultry Science Association meeting in Lexington, Ky., August 10 to August 12. R. E. Cray of Ohio had charge of arranging the extension program. Two conferences were held in the Faculty Club between breakfast and the morning session. At one conference marketing projects were discussed, and a committee composed of L. E. Todd, W. D. Termohlen, and R. E. Cray was appointed to study the organization of suitable marketing projects, and possibly prepare briefs and extracts which later could be published in THE EXTENSION POULTRY HUSBANDMAN.

John Vandervort, project leader of poultry extension work in Pennsylvania, was elected to the board of directors of the Poultry Science Association.

Clyde Ingram and C. L. Hill of Louisiana and Jack Redditt of Nebraska attended the International Baby Chick Association meeting in Louisville, Ky., but were unable to be present at the Lexington meeting.

* * * * *

A progress report of turkey investigations as carried out at the U. S. Range Livestock Experiment Station, Miles City, Mont., has been issued by the Animal Husbandry Division, Bureau of Animal Industry, U. S. Department of Agriculture. A limited number of copies are available for distribution.

REPORTS ON DEMONSTRATION FARM FLOCKS

In this issue will be found a summary of reports from demonstration farm flocks. Not all the States that carry out this project are listed. Some States keep the Department of Agriculture on the monthly report mailing list; other States put the yearly summary in their annual reports.

Three classes of records are in use: Calendar Flocks, Demonstration Flocks, and Enterprise or Cost Accounting Studies. Calendar Flocks are used primarily as a means of contact with poultry raisers. As a rule only one or two items, such as egg production and mortality, are reported. Some States ask the cooperators to keep a Calendar Flock record for one year before they use the Demonstration Flock record, which includes more items. In Oklahoma a franked postal card is used by the cooperator to send in the report. These cards already addressed to the county agent or State specialist are sent out, stapled to the record pad.

H. H. Alp of Illinois brought out a different type of calendar last year. Its make-up is similar to that of a regular commercial calendar except that three lines are placed under each figure, allowing room for a notation of the number of eggs, income, and expenses. Each month's page is headed by a picture that tells a story, and in the lower right-hand corner a few timely suggestions are printed. Usually there is a reference to some bulletin which will supply further information.

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Mr. Alp said he noticed that farm women in Illinois were keeping their egg records on the calendar supplied by a local advertiser, so he supplied them with a poultry calendar that allowed room for the figures. A good example of extension teaching and salesmanship--"Making it easy for them to take."

In demonstration farm record keeping, some States publish the full list of cooperators either by number or name; others report only the total or average results and single out those cooperators ranking highest. Newspaper men tell us that most people like to see their names in print--especially if they are winners.

In the last two years more attention has been paid to Enterprise or Cost Accounting Studies of poultry by the extension economists and farm-management offices. More nearly complete cost-accounting studies of poultry farms have been made and more details of the farm flock have been gathered on the route studies. A detailed survey of commercial poultry farming in Utah will soon be published. With feed and eggs at a lower price level the need for such data is greater than ever.

A chart showing the production of hens and pullets is reproduced on page 6. That a greater number of eggs are obtained in the fall and winter from the pullets than from the hens is shown clearly.

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Summary of Reports on Demonstration Farm Flocks, November 1, 1929 - October 31, 1930

State	Remarks	Number of farms	Size of flocks	Total number of hens	Eggs per hen	Per cent mortality	Per cent culled	Egg income per hen	Total income per hen	Feed cost per hen	Difference cost and income per hen	Labor income per hen	Feed cost per hen	Selling price per dozen eggs
Illinois		246	136	45,706	127	13.9		\$2.46	\$	\$1.99*	\$1.63	\$	\$0.19	\$0.25
Iowa		40	205	8,200	125	21.0		1.74	4.26	2.00	1.86			.25
Minnesota		56	226	12,656	146									
Missouri	Farm	370	173	64,010	145				3.93	2.04*	1.94		.16	.25
Missouri	Commercial	47	543	25,756	163				4.41	2.03*	2.33		.15	.26
North Dakota		30	119	3,561	99					1.34		1.15		
Ohio		354	361	123,111	152	13.1		4.54	6.03	2.13	2.61	2.45	.13	.26
Wisconsin	**		185		177		51					1.44		
Indiana		119	262	31,221	145									
Arizona		10		4,218	134	13.3		3.93		2.30*	1.33	2.25	.27	.31
Montana		25	143	3,704	144									
Nevada		22	666	14,653	164	6.3	39.2							
Mississippi				4,576	154									
North Carolina		128	167	21,425	160			4.64	4.73	2.40	2.40		.19	.35
South Carolina		132	166	21,912	146	14.9		4.31	6.16	2.34	2.29	2.25		.36
Tennessee	Middle	64	113	7,226	133	12.0			4.24	3.67*	1.17	1.17		
Tennessee	Western	94	125	11,740	153	11.2		3.81	4.90	2.63		1.47		
Kentucky		126	114	14,364	143					2.85*				
Connecticut	**	231	449	103,719	162	16.9								
Delaware	Pullets				157		45							
Delaware	Hens	131			123		52							
Delaware	H and P				123		62							
Maryland	Pullets				161	18.3	33.2							
Maryland	Hens	39	409		144	14.6	39.7							
Maryland	H and P				156	15.3	41.6							
Massachusetts		41	530	21,730	147	14.9	60.2							
New Hampshire		70	217	15,206	164	14.0	86					3.26		.40
Maine		79	163	12,342	147				9.32	5.11				

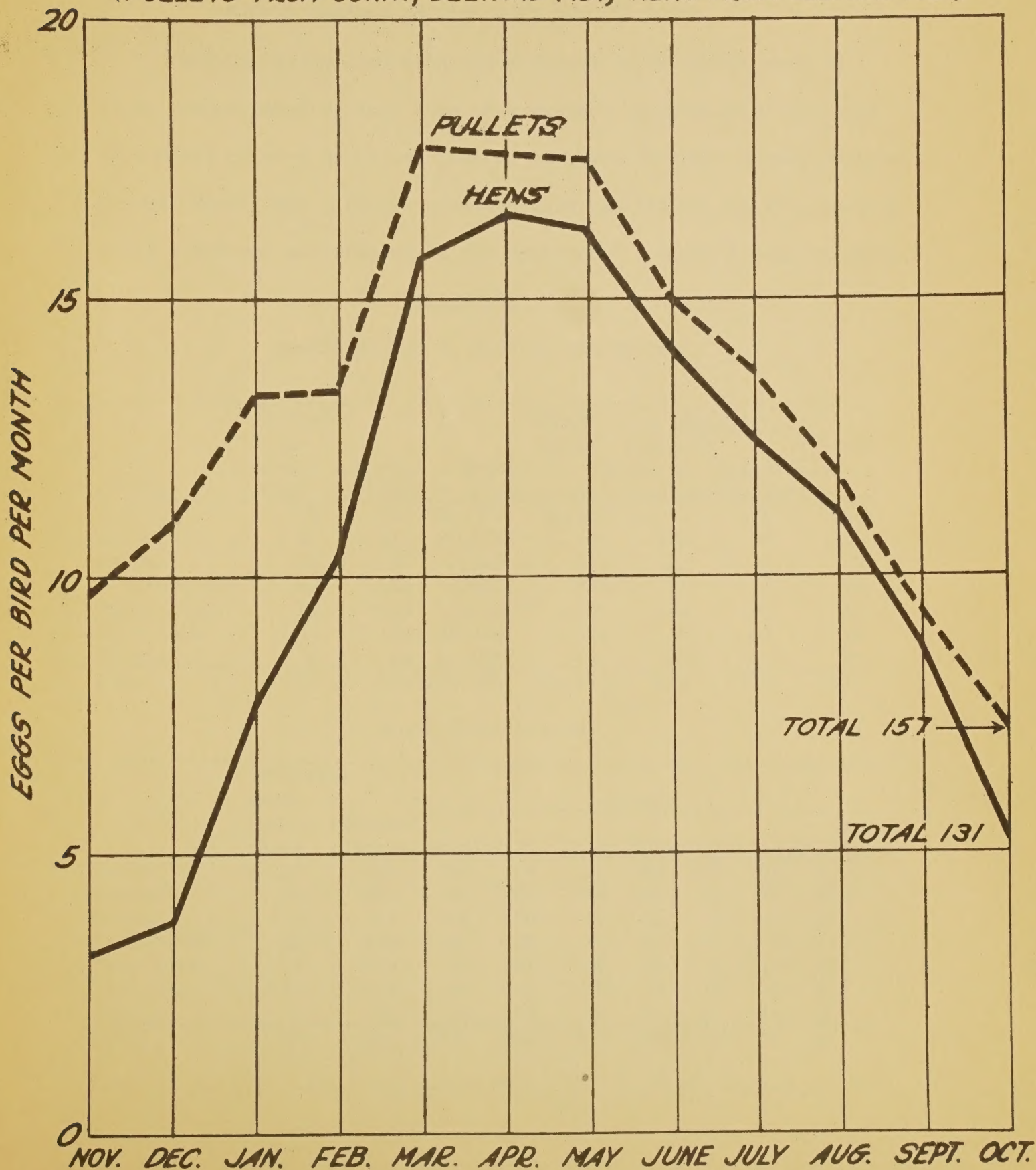
* Includes cost of raising young stock

** Year runs from October 1 to September 30

PRODUCTION OF PULLETS AND HENS ON 750 FARMS

NOVEMBER 1, 1929 - OCTOBER 31, 1930

(PULLETS FROM CONN., DEL. AND MD.; HENS FROM DEL. AND MD.)



POULTRY SURVEYS IN MINNESOTA AND ILLINOIS

Getting acquainted with the problems of extension work is often accomplished by some form of a survey. A summary of two types of surveys carried on in two States, as given in their annual reports, is published. The Illinois questionnaire was filled out at a meeting --the other was distributed to the members of a women's poultry club.

Minnesota

Conditions as to Housing and Feeding

County	:Number : :com- : :muni- : :ties :	:Number : :flocks :	:Number : :hens :	:Eggs : :daily : :for one : :week :	:Houses : :Number : :large : :enough :	:Flocks : :Number : :fed : :mash :
Martin	19	219	34,777	13,983	71	128
Meeker	20	210	20,626	6,149	101	97
Norman	12	97	7,468	877	36	29
W. Ottertail	12	122	9,833	858	62	43
Pennington	14	109	7,023	821	44	25
West Polk	15	143	12,146	1,651	63	55
Wilkin	8	92	11,018	571	32	49
Total	100	992	102,891	24,910	409	426

Breed Distribution

	:Number : :com- : :muni- : :ties :	:Number : :flocks :	Breeds						
			Mixed	Light	Rocks	Reds	Wyan	Orp	Other
Martin	19	229	38	64	55	32	35	24	0
Meeker	20	210	59	32	44	47	22	18	3
Norman	12	97	24	28	17	18	8	14	2
W. Ottertail	12	122	23	25	39	17	16	9	1
Pennington	14	109	22	51	28	22	4	10	1
West Polk	15	143	33	49	25	29	9	5	2
Wilkin	8	92	10	19	29	19	10	18	0
Total	100	1,002	209	268	237	184	104	98	9

Illinois

Report of Findings Made from Questionnaire Used
in Conjunction with Baby Chick Schools

Total usable questionnaires	452
Total mature birds reported in questionnaires	63,653
Average size of mature flock	140.8
Total chicks reported on questionnaires	320,385
Average size of flock of chicks	708.3
Average per cent mortality reported on chicks to 12 weeks	20.7
Per cent of flock owners reporting disease trouble in mature flocks	47.3
Per cent of flock owners reporting disease not knowing cause of trouble in mature flocks	42.0
Per cent of flock owners reporting trouble and using remedies in mature flocks.	54.0
Per cent of flock owners reporting trouble and not satisfied with remedies used	77.6
Per cent of flock owners reporting trouble and consulting veterinarians	21.0
Per cent of flock owners reporting trouble in chicks from development of crooked legs	7.5
Ages at which crooked legs in chicks were noticed:	

<u>Age</u>	<u>Per cent of total cases</u>
2 to 4 weeks	8.0
4 to 6 weeks	26.4
6 to 8 weeks	14.7
8 to 10 weeks	14.7
10 to 12 weeks.	20.5
12 weeks	14.7

Ages at which greatest chick mortality were reported, 320,385
chicks being involved:

<u>Age</u>	<u>Per cent of total cases</u>
1 to 2 weeks	48.3
2 to 4 weeks	29.0
4 to 6 weeks	12.8
6 to 8 weeks	4.5
8 to 10 weeks.....	3.0
10 to 12 weeks.....	2.1

Time of year when trouble was experienced in mature flock:

<u>Season</u>	<u>Per cent of owners reporting trouble</u>
Winter	38.5
Fall	26.5
Spring.....	14.4
Summer.....	9.6
More or less general...	10.0

Type of floors reported in use in poultry houses:

<u>Type</u>	<u>Per cent</u>
Dirt	49.2
Concrete.....	28.3
Board.....	13.4
Board and concrete.....	3.0
Board and dirt.....	3.0
Dirt and concrete.....	2.8

Conclusions from study

1. Nearly 50 per cent of the flock owners are having trouble from sickness in their mature flocks.

2. A very small percentage of those having trouble know the cause of it.

3. Comparatively few are consulting their veterinarians.

4. Fall and winter seem to be the periods of the year when most trouble is experienced.

5. Dirt floors in hen houses predominate.

6. The greatest chick mortality occurs during the first three weeks of age.

7. The trouble of crooked legs in chicks reared on farms does not seem to be a very serious problem at present and seems to be most prevalent at about 4 to 6 weeks of age.

FILM STRIPS

Ever start out on a field trip with a box of lantern slides, a heavy case containing a projector, and an acetylene gas tank? If you haven't, you can't fully appreciate the use of film strips and the new lightweight projectors. Nearly all such machines may be equipped for use with either 6, 32, or 110 volt current.

C. M. Ferguson of Ohio is quite an enthusiast on film strips. He gave a fine paper on the subject at the Poultry Science Association meeting this summer.

There is a good demand for the film strips. The Department of Agriculture has assembled the following for poultry!

<u>Series</u> <u>No.</u>	<u>Title</u>	<u>Cost</u>
271	The Marketing of Eggs in the U. S. (46 frames)	\$0.35
17	Farm Poultry Raising (42 frames)	.35
126	Selecting the Laying Hen (36 frames)	.35
133	Standard Breeds of Poultry (47 frames)	.35
168	Inspection of Dressed Poultry (41 frames)	.35
239	Care of the Laying Flock (25 frames)	.35
276	Growing Healthy Pullets (33 frames)	.35

As pictures of local interest are especially effective, if any specialist desires to make up his own film strip we shall be glad to cooperate with him. Clean-cut, glossy-finish photographs should be assembled and organized into a series. The price for a film-strip negative and one positive print (ready to use in a projector) is 25 cents per frame. A series containing 40 frames, therefore, would cost \$10. The cost of additional prints is very

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small. Title slides aid greatly in clarifying certain illustrations --they should be supplied either printed or hand-lettered on cardboard about the size of the photographs used. They then are reproduced at the same cost as a photograph. The poultry specialists in Ohio, Michigan, and Wisconsin have prepared film strips on GROWING HEALTHY CHICKS. W. H. Rice in Maryland has one on GROWING POULTS. No doubt there are others.

The Bureau of Animal Industry has recently completed some material for small exhibits or window displays. This consists of 5 sets of illustrated panels. Each panel when unfolded occupies a space 5 feet long and 2 1/2 feet high. For shipping, the panels are packed two in a crate and weigh about 65 pounds per crate. They may be borrowed from the Bureau for short periods at no expense except transportation charges both ways. They may be shipped by either freight or express. The following subjects are covered:

Panel No. 1. USDA (Scenes at Beltsville)

Panel No. 2. Chick Sanitation

Panel No. 3. Sanitation (adult birds)

Panel No. 4. Brooding

Panel No. 5. Poultry Management.

POULTRY TEAM DEMONSTRATION WORK

Since the establishment of the Poultry Demonstration Team Contest at St. Louis in connection with the National Dairy and Poultry Show, a great deal of interest has been stimulated on poultry-team-demonstration work. A story written by a member of the Missouri team which won the 1930 contest follows. A very excellent outline given by the poultry demonstration team from Oklahoma is also published.

Outline: Jackson County, Mo., Poultry Demonstration Team

Subject: Proper Care and Management of Baby Chicks for the First Eight Weeks.

A

B

Addresses audience; makes a brief statement about the club which the team represents; leads in club pledge, and introduces team mate and self.

Stands at attention; joins in repeating pledge, and remains at attention until introduced.

A speaks

B assists

1. Care of chicks from time from incubator.
2. Importance of correct feeding.
3. Explains and demonstrates mixing of baby chick butter-milk starting mash.
4. Scratch grain.
5. Oyster shell

Prepares equipment and material for A to use.

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A assists

Provides B with materials needed

B speaks

1. Method of feeding

- a. Alfalfa litter
- b. First 3 days
- c. 3 days to 2 weeks
- d. Third week

A speaks

Gives brief summary of points made.

Asks for questions pertaining to the demonstration.

Thans the audience for attendance and attention.

B assists

Quietly collects equipment and clears up the table.

Answers questions.

Stands at attention.

My team mate, Stanley Rader, and I, Earl Radar, were sent to the National Dairy and Poultry Show at St. Louis, Mo., to represent the State of Missouri in 4-H Club poultry demonstrations. We belong to the Blue Ridge Poultry Club of Jackson County, which is one of the 300 baby-chick clubs in our State.

The title of our demonstration was the "Proper Care and Management of Baby Chicks for the First Eight Weeks."

The stage setting for our demonstration consisted of the front framework of a Missouri-type colony-brooder house in full size, two brooder stoves, one drum-type oil burner, one coal stove, and other necessary equipment. The purpose of two stoves was to show the two types recommended by the Missouri State College.

My team mate demonstrated the proper equipment, the good points of our brooder house, the proper feeders and water fountains, brooder stoves, and the mixing of our starting mash feed in which we mixed 100 pounds of feed. He also brought out the four high points we follow in raising baby chicks. These points are: Clean chicks, good methods, good feed, and clean ground or range for chicks to run on. Next I demonstrated the use of this equipment and care of chicks.

First I demonstrated the cleaning and disinfecting of the house; then getting the house ready for the chicks, such as putting the sand and litter on the floor, installing the stove, heating the house, and the correct temperature for the chicks. Then I demonstrated the first feeding of the chicks and putting them to bed for the first few nights. Then I skipped some time and told about providing plenty of roosts for the chicks as they grow older, and last but not least the importance of moving the brooder house to clean range in the spring to prevent the spread of the different disease germs that help to destroy our flock.

Our demonstration was benefited greatly by the help of Mr. Berley Winton, a poultry specialist from the Missouri State College of Agriculture, and Mr. Martin, our State club leader. We also attributed a great deal of our success to Mr. Robert S. Clough, our county extension agent, and Mr. C.K. Kolb, our local club leader.

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Outline: Ottawa County, Okla., Poultry Demonstration Team

Subject: Feeding for Egg Production.

Team Captain: We are the poultry demonstration team from Oklahoma. This is my team mate, Sewell Skelton. I am Glenn Butts, the Captain.

Team Mate: Sets canvas on table. Stands at chart No. 1 and shows illustration-- "Factors for Egg Production."

We are going to demonstrate the mixing of poultry feed for egg production.

The ability to produce a large number of eggs depends on a number of factors. First the hens must be bred for egg production. They must have lots of vigor and vitality that will enable them to ward off disease, and stand up under heavy production. The first five months of a hen's life is very important. Our pullets should be early hatched, correctly brooded, of bred-to-lay stock.

The hen is a machine that must be protected from the weather. A clean, dry, light, well-ventilated house that is warm and free from draft adds comfort to the hen and this in turn will encourage production. We need to care for and feed the birds correctly in order to maintain health and furnish the egg-producing materials.

Hens must have freedom from blood-sucking insect pests.

Team Captain:

(Will be at chart No. 2 and show illustration, spreads canvas)

Team Mate:

In order to feed intelligently, it is necessary to know something about the hen, the feed, and the finished product which is the egg. One who is successful in feeding must feed the hen as part of the flock and not as an individual. The hen has a body temperature of about 104°F. The digestive system is short and simple. It has only slight provision for the digestion of fiber and has very little capacity. Therefore, we can not feed coarse and bulky feeds to any great extent. If too much concentrates are fed there is danger of digestive trouble, so we must have a properly balanced feed.

Team Captain: We recommend the ration that has proved highly satisfactory at the Oklahoma A. & M. College and at the Third Oklahoma Egg-Laying Contest, where a 10-hen pen laid 2,658 eggs in 364 days and where the average production of the whole contest was 194 eggs per bird.

Team mate: (Sets two boxes containing green feed, grit, etc., on table. Illustrates chart No.3)

The ingredients of this ration are:

200	pounds	bran
100	"	yellow corn meal
100	"	pulverized barley or oats
100	"	shorts
75	"	meat scraps
50	"	alfalfa leaf meal
40	"	cottonseed meal
15	"	dried buttermilk
12	"	bone meal
6	"	calcium carbonate
6	"	salt

We are going to mix a ration containing 1/20 of this amount.

Team Captain: Places his box in place. Replaces ration chart. Places green feed. Points to protein feed, bran, and cottonseed meal.

Team Mate: The reason this ration has proved satisfactory is that it meets all the requirements of a ration for egg production. It is palatable and wholesome, has a variety of feeds that are undecayed, has good mechanical effect, is available and very reasonable in cost.

We must consider the likes and dislikes of the hens in selecting a ration. The feeds they like best are the ones they will eat the most of. Hens like corn meal, ground oats, meat scraps, bran, but as you notice, the less palatable feeds such as cottonseed meal are fed in very limited quantities.

All the ingredients that the ration contains are of the highest grade, clean, and wholesome. It does not pay to feed musty or decayed feeds as they will cause serious trouble.

This ration has a variety of feeds which stimulate the appetite, increase the consumption, and furnish more than one source of protein which is very essential in any ration.

This ration contains enough bran to be of value in keeping the digestive tract open. It contains very little cottonseed meal, which is thought by most poultrymen to have a constipating effect but which actually is a laxative feed.

Team Captain: All the feeds this ration contains are grown on most farms, with the exception of cottonseed meal, dried buttermilk, bone meal, and calcium carbonate, but these can be supplied at local feed stores, and such a variation in feeds will make the ration cheaper per pound than when only 4 or 5 different feeds are used. The best feed, of course, is the one that gives the most economical returns.

Team Mate: Turns back to chart No. 3. Takes out vials containing samples of feed. Sets box down. Pours feed. Gets scoops.

How to Mix the Ration - All the feeds that are to enter into this egg-laying ration should be weighed so that each time a ration is mixed it will be the same. Select a clean smooth place to mix the feeds. Most farmers can use an empty bin for this purpose. In order to procure the best mix, it is advisable to pour the bulky feeds on the floor first and the finer feeds last.

The order in which to pour the feeds is bran, barley, alfalfa meal, yellow corn meal, shorts, meat scraps, cottonseed meal, dried buttermilk, bone meal, calcium carbonate, and salt.

Team Captain: Assists the team mate in mixing the ration and then fills hopper.

Team Mate: Before us we have the ration, but it is not in its best form until after it is thoroughly mixed. Two can mix the ration very satisfactorily by working from each side. Cut the ration at least four times. Under most conditions it is advisable to feed the mash dry in a hopper, as it requires less labor, gives all the hens an equal chance, and requires less

skill in feeding. On the other hand, the dry mash is not so palatable as the wet mash but experiments and demonstrations have shown that it is more satisfactory to keep the dry mash before the bird all the time.

Mash is thought of primarily as the egg food. Mash contains more protein than does grain, and is more quickly digested and assimilated by the birds, which enables the hens to produce more eggs. However, mash does not make up the entire ration. Now the mash is mixed, and what is not used in filling the feed hopper should be sacked and stored in a bin that is dry and vermin-proof. About half the feed a hen consumes is in the form of grain. Hens like grain, and will usually eat it in preference to mash, if they can get it. Grain should be considered as an exerciser.

Team Captain: The grains that are universally used by successful poultry men are oats, wheat, and cracked yellow corn. We make the birds exercise by feeding grain in clean straw. The whole oats are fed about 10:00 in the morning. This makes up about one-third of the total grain feed for the day. A very good rule to use in feeding is to feed about 1 pint of oats to 12 hens, and gauge from that the amount the larger flock will need. The wheat and corn are mixed

Team Mate: Turns to Chart No 5 "Grain Ration" after which he will remove feed hopper.

Turns to chart No. 6 -- "How to Feed Grain." Shows grains.

in equal parts in the same manner as the mash was mixed. The wheat and cracked corn are fed about 2 1/2 hours before the birds go to roost. In this way, the birds will go to roost with full crops. (Team mate uses pointer).

Team Captain: Never put more grain in the litter than the birds will eat before going to roost. It is better to underfeed slightly than to overfeed. If wheat and cracked yellow corn can be found in the litter early in the morning, it is a sign that too much grain is being used. The amount of grain and mash will vary at different times of the year. Less grain is fed during the months of June, July, August, September, and October than the other seven months of the year.

Captain goes to charts and shows illustration No. 7--"Green Feed is Essential."

Shows green feed. Takes down chart.

Team Mate: Along with the scratch grain and mash the birds must be supplied with green feed. Green feed is a very important part of the ration. It is very valuable in several ways. It contains vitamins. It acts as a tonic. It helps to stimulate the appetite of the hens and enables them to consume more feed to better advantage. A number of poultry men have found that Swiss chard is highly satisfactory as a source of green feed, but since this will not grow in all sections, some other green feed can be supplied, such as sprouted oats,

barley, cabbage, or carrots. Another source of green feed is wheat, oats, rye, or barley pastures. In whatever form green feed is to be supplied it should be fed in abundance daily.

Team Captain: Grit and oyster shell should be put before the hens in a hopper or box at all times. They are very essential parts of the ration for laying hens. A part of the calcium carbonate that is needed for shell material is mixed in the ration. If enough shell-making material is not used a number of soft-shelled eggs will result, which encourages the egg-eating habit and decreases the number of eggs produced. Grit or oyster shells are necessary as the hen depends upon the grinding action of the grit in the gizzard to make the grain available.

Did you ever hear of the poultry man whose hens began laying soft-shelled eggs? He didn't know whether to sell the hens or put in frying pans for nests. But we know that if an abundance of grit and oyster shell are kept before the birds no such thing will happen.

Team Mate: goes to the chart and shows the illustration No. 8--"Essentials of Grit and Oyster Shell."

Shows grit and oyster shells, soft-shell egg.

Chart No. 9

Points out chart, piling green stuff in neat pile.

Team Mate: Water is necessary because it serves as a carrier and regulates the body temperature. Since the fowl's body is over 55 per cent water the hens must have a sufficient supply of fresh water. Lack of water hinders digestion, thickens the blood, and raises the body temperature. It has been estimated that one dozen

eggs contain about one pint of water. In winter it is not necessary to warm the water but care must be taken to see that the supply of water is not frozen. This seems like a minor point, but it is by the observation of the finer points that one is able to make a success in feeding hens for egg production.

Team Captain: From our study of poultry and poultry feeds we have reached the conclusion that there are ten essentials of feeding in order to secure largest profits. These are:

1. Feed a balanced ration to secure maximum production.
2. Use home-grown feeds to cut cost to a minimum.
3. Give one-half feed in form of mash. It is more easily digested than grain.
4. Keep the hoppers full so the hens will never be hungry.
5. Feed scratch grain as an exerciser.
6. Give one-third of this grain in the morning.
7. Full crops at night keep the birds from being hungry.
8. Green feed is essential because it contains vitamins.
9. Grit and oyster shell are necessary for shell-making material and they are the hens' false teeth.
10. Cool fresh water is necessary at all times.

This concludes our demonstration.
Are there any questions? Thank you.

Team Mate: Points out chart.

THE HEREDISCOPE

by

H. L. Richardson, Poultry Specialist

State of Maine

The herediscopes may be defined as a relatively simple contraption which has been devised to make easy the teaching of the principles of heredity. It is made and distributed by the American Genetic Association, Victor Building, Washington, D. C.

The herediscopes is comparatively new; very few extension specialists or county agents have used or even seen one. It first came to the writer's attention through J. B. Parker, senior extension dairy husbandman, U. S. Department of Agriculture, who brought a set of 15 herediscope to Maine where he gave a demonstration before a group of county agents and others. We immediately arranged for Mr. Parker to give a demonstration before a group of dairymen. It worked so well that our State office has been equipped with them.

One must see and use the herediscopes really to sense its possibilities. With some knowledge of genetics and the biology of the sex cell, its use becomes at once clear. With a little practice one can quickly illustrate the behavior of inherited characters.

The herediscopes consists of a piece of heavy cardboard about 2 feet square which folds across the center for the purpose of making it more compact when it is not in use. The working surface

of the board contains an outline representing the genetic make-up of three generations. This is arranged on the order of a pedigree blank form. For each individual there is a chance to represent the character genes on each of a pair of chromosomes. Pairs of characters are represented by colored celluloid chips.

With these colored celluloids one may make up a mating of two individuals with any genetic make-up for any characters desired, spin the dial, and by bringing down the genes indicated by the dial (law of chance) show one of the different possibilities of inheritance from the mating. With a number of boards operating, the many different possibilities of inheritance from the same mating are clearly shown.

The appearance of the herediscope in this State was particularly timely since we are beginning to develop an extensive poultry-breeding program. A series of county meetings was arranged through county agents, and H. L. Shrader, senior extension poultry husbandman, U. S. Department of Agriculture, assisted in conducting the meetings. We believe the herediscope assisted materially in giving the poultry men attending a clearer understanding of the basic fundamentals involved in poultry breeding.

It is particularly useful in demonstrating why the selection of breeders by appearances only is a slow and unsatisfactory method and it is very easy to show why progeny testing is so essential to real progress in the breeding program for any class of farm animals.

TESTING FOR PULLORUM DISEASE

A recent press release by the U. S. Department of Agriculture announced that further improvements had been developed in preparing the antigen in the so-called whole-blood test for Pullorum disease. A patent has been obtained on this improved technic which includes the addition of a stain. The policy of the department will be to permit commercial concerns to produce the stain antigen under this patent providing these concerns will conform to a very stringent set of rules. The new antigen contains a preservative that improves its keeping qualities while the addition of the stain assists greatly in reading the results.

In cooperation with various State agencies, a large number of comparative tests will be made. New Jersey, North Carolina, Mississippi, and Minnesota are some of the States that are cooperating in this work. Everyone will agree that a practical simplified test will do much to expand the use of quality-tested chicks and add to the stability of the industry.

Progress of Pullorum Disease Testing

(Extract from New Hampshire 1930 Annual Report)

<u>Year</u>	<u>No. Birds Tested</u>	<u>Year</u>	<u>No. Birds Tested</u>
1918-19	4,000	1924-25	40,000
1919-20	7,000	1925-26	40,039
1920-21	11,400	1926-27	73,183
1921-22	20,000	1927-28	81,172
1922-23	38,000	1928-29	124,785
1923-24	40,000	1929-30	150,416

The work was begun in 1918 by Professor Richardson and there was a steady increase up to the season of 1923-24. From this time until the season of 1926-27 the number of birds remained the same. It was found that a 100 per cent test of the flocks was the only safe method to follow over a period of years. Since the adoption of the 100 per cent testing requirements annually for accreditation, the success of the work is shown by the rapid increase in the number of birds tested annually.

In 1920-21 the losses from baby chicks by poultry men testing was 29 per cent less than during previous years.

Per cent of infected flocks tested in past years

<u>Season</u>	<u>Per cent infected flocks</u>	<u>Per cent infected birds of total tested</u>
1920-21	60	7.66
1925-26	32	1.74
1926-27	29	2.12
1927-28	32	2.75
1928-29	27	1.50
1929-30	18	.47

(Extract from Maryland 1930 Annual Report)

The following table indicates the amount of work accomplished in this cooperative improvement work during the year with poultry breeders and hatcheries in Maryland. P. A. Raper, specialist in poultry marketing, is in direct charge of this work.

		Females		
Breed	Variety	:Number :of birds :blood-tested	:Number : of :reactors	:Per :cent :reactors
Plymouth Rock	Barred	: 1,934	: 378	: 19.54 +
" "	White	: 111	: 16	: 14.41 +
Rhode Island Red	Single Comb	: 170	: 85	: 50.00
Leghorn	S. C. White	: 3,962	: 633	: 19.95 +
All breeds and varieties		: 6,177	: 1,112	: 18.00 +

		Males		
Plymouth Rock	Barred	: 233	: 29	: 13.00 +
" "	White	: 15	: 2	: 13.33 +
Rhode Island Red	Single Comb	: 65	: 20	: 30.77 -
Leghorn	S. C. White	: 259	: 8	: 3.09 -
All breeds and varieties		: 562	: 59	: 10.49 +

		Males and Females		
All breeds and varieties - Total		: 6,739	: 1,171	: 17.38 -

Compiled by

Alfred Van Eugene, Secretary-Treasurer
New York State Cooperative Official Poultry Breeders, Incorporated

[illegible]

Statement in Case to State Department of Agriculture.

"State" refers to State Department of Agriculture.
"College" refers to State College of Agriculture.

"Accredited" means two consecutive nonreacting tests for B. V. D.

EXTENSION SPECIALISTS IN POULTRY

STATE	NAME	HEADQUARTERS
Alabama	H. R. Bailey	Alabama Polytechnic Institute, Auburn, Ala.
Arizona	Clyde F. Rowe	College of Agriculture, Tucson, Ariz.
Arkansas	G. W. Know, jr.	310 Federal Bldg., Little Rock, Ark.
California	W. E. Newlon	College of Agriculture, Berkeley, Calif.
Colorado	O. C. Ufford	College of Agriculture, Fort Collins, Colo.
Connecticut	R. E. Jones	Connecticut Agricultural College, Storrs, Conn.
Delaware	E. S. Walford (club) H. L. Palmer	University of Delaware, Newark, Delaware.
Florida	N. R. Mehrhof	College of Agriculture, Gainesville, Fla.
Goergia	Frank Mitchell(Part time) R. J. Richardson W. D. McRainer	Georgia State College, Athens, Ga.
Hawaii	H. L. Chung (part time)	University of Hawaii Honolulu, Hawaii.
Idaho	Pren Moore	Extension Division of the University of Idaho, Boise, Idaho.
Illinois	H. H. Alp	University of Illinois, Urbana, Ill.
Indiana	L. C. Todd Wm. Kohlmeier S. R. Walford	Purdue University, La Fayette, Ind.
Iowa	W. H. Vernon W. R. Whitfield W. D. Termohlen	Iowa State College of Agriculture, Ames, Iowa.
Kansas	G. T. Klein H. A. Seaton	Kansas State Agricultural College, Manhattan, Kans.
Kentucky	C. E. Harris J. E. Humphrey Stanley Caton	College of Agriculture, Lexington, Ky.
Louisiana	Clyde Ingram C. L. Hill	Louisiana State University, Baton Rouge, La.

-----o(The Extension Poultry Husbandman)o-----

STATE	NAME	HEADQUARTERS
Maine	H. L. Richardson	College of Agriculture, Orono, Maine.
Maryland	T. H. Rice	University of Maryland, College Park, Maryland.
Massachusetts	Wm. C. Monahan	Massachusetts State College, Amherst, Mass.
Michigan	J. A. Hannah E. R. Hancock O. E. Shear	Michigan State College, East Lansing, Mich.
Minnesota	Miss Cora Cooke	University of Minnesota, St. Paul, Minn.
Mississippi	J. D. Sykes Miss Eva E. Leggett	Mississippi A. & M. College, A. & M. College, Miss.
Missouri	Berley Winton Harold Canfield	College of Agriculture, Columbia, Mo.
Montana	Miss Harriette E. Cushman	State College of Agriculture, Bozeman, Mont.
Nebraska	J. R. Redditt J. H. Claybaugh	College of Agriculture, Lincoln, Nebr.
New Hampshire	R. C. Bradley	University of New Hampshire, Durham, N. H.
New Jersey	L. H. Black J. C. Taylor	State College of Agriculture, New Brunswick, N. J.
New Mexico	T. M. Ginn (part time)	College of Agriculture, State College, N. M.
New York	L. M. Hurd H. E. Botsford L. E. Weaver Mrs. L. E. Dawley (club)	Cornell University, Ithaca, N. Y.
North Carolina	C. F. Parrish	State College Station, Raleigh, N. C.
North Dakota	F. E. Moore	North Dakota Agricultural College, Agricultural College, N. Dak.
Ohio	R. E. Cray P. B. Zumbro C. M. Ferguson	Ohio State University, Columbus, Ohio.
Oklahoma	H. G. Ware I. A. Hollar	Oklahoma A. & M. College, Stillwater, Okla.
Oregon	H. E. Cosby	Oregon Agricultural College, Corvallis, Oregon.
Pennsylvania	John Vandervort H. H. Kauffman D. C. Henderson C. O. Dossin	Pennsylvania State College, State College, Pa.

STATE	NAME	HEADQUARTERS
Rhode Island	C. P. Hart (part time)	Rhode Island State College, Kingston, R. I.
South Carolina	P. H. Gooding	Clemson Agricultural College,
	C. L. Morgan (part time)	Clemson College, S. C.
	Miss Juanita Neely	State Normal College, Rock Hill, S. C.
Tennessee	A. J. Chadwell	College of Agriculture, Knoxville, Tenn.
	J. C. Snow	1020 Stahlman Bldg., Nashville, Tenn.
Texas	E. N. Holmgreen	Texas A. & M. College, College Station, Tex.
Utah	Carl Frischknecht	College of Agriculture, Logan, Utah.
Vermont	A. W. Lohman	College of Agriculture, Burlington, Vt.
Virginia	H. L. Moore	Virginia Polytechnic Institute, Blacksburg, Va.
	H. C. Kilpatrick	
	Miss Bessie Hodsden	
Washington	W. D. Buchanan	State College of Washington, Pullman, Wash.
West Virginia	R. L. Mason	College of Agriculture, Morgantown, W. Va.
Wisconsin	J. B. Hayes	College of Agriculture, Madison, Wis.
	G. Annin	
Wyoming	O. N. Summers	College of Agriculture, Laramie, Wyo.

